

CLAIMS:

1. A process for degradation of cyclic nitramines comprising the steps of: attacking a first N-NO₂ group in the presence of water resulting in denitration of the first N-NO₂ group; and subsequently effecting ring cleavage.
2. A process according to claim 1 wherein a second N-NO₂ group is attacked after denitration of the first N-NO₂ group, resulting in a second denitration prior to effecting ring cleavage.
3. The process of claim 1 wherein the step of attacking a first N-NO₂ group comprises a chemical, biochemical or biological attack.
4. The process of claim 1 wherein the step of attacking a first N-NO₂ group comprises a chemical attack selected from the group consisting of photodenitration and alkaline hydrolysis.
5. The process of claim 1 wherein the step of attacking a first N-NO₂ group comprises a biochemical attack by exposure to an enzyme selected from the group consisting of diaphorase, cytochrome P450, xanthine oxidase, nitroreductase, and nitrate reductase.
6. The process of claim 1 wherein the step of attacking a first N-NO₂ group comprises a biological attack by exposure to a microbe selected from the group consisting of *Clostridium kluyveri*, *Rhodococcus sp.*, and *Aspergillus niger*.
7. The process of claim 6 wherein *Rhodococcus sp.* comprises strain DN22.
8. The process of claim 1 wherein said nitramines comprise monocyclic or polycyclic nitramines.

9. The process of claim 1 wherein said nitramines are explosives selected from the group consisting of hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX), HMX, CL20 and tetryl.
10. A process to detect decomposition of hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX) comprising detection of 4-nitro-2, 4-diaza-butanal (4-NDAB) as a decomposition product.
11. The process according to claim 4 wherein said chemical attack comprises photodenitration by photolysis at 350 nm in aqueous solution.
12. A process according to claim 1 wherein at least one step occurs in the presence of a cyclodextrin co-solvent.
13. A process for degradation of cyclic nitramines comprising the steps of: effecting α -hydroxylation of a $-\text{CH}_2$ bond to form unstable carbinol by exposure to cytochrome P450; and subsequently effecting ring cleavage.
14. A process for preventing sequential reduction of cyclic nitramine explosives to nitroso-derivatives comprising the steps of α -hydroxylation of a $-\text{CH}_2$ bond to form unstable carbinol; and subsequently effecting ring cleavage.
15. A process for degradation of 4-nitro-2,4-diazabutanal comprising exposure to an attack selected from the group consisting of anaerobic microbial attack, anaerobic enzymatic conditions, and chemical hydrolysis.
16. The process of claim 15 wherein said attack comprises an attack selected from the group consisting of exposure to one or more of diaphorase, cytochrome P450, xanthine oxidase and nitrate reductase; exposure to a microbe selected from the group consisting of *Clostridium kluyveri*, *Rhodococcus sp.*, and *Aspergillus niger*; and alkaline hydrolysis.